South-south dialogue on clean air action in Africa: Towards good practices

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Africa Network on Clean Air
Solutions: Sharing best practices to reduce vehicular pollution for clean air
Centre for Science and Environment, India
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Africa Network on Clean Air Solutions

Africa Network evolving since 2015

For best practice sharing on solutions for clean air

Matured as South-South Dialogue – Africa and South Asia

Several thematic issues taken up – Air quality monitoring and management, Fuel and technology roadmap; Vehicle import policy, mobility transition, among others

Complimented by in-country engagement in Nigeria and Ethiopia

Countries from Africa present today—Ethiopia, Nigeria, Kenya, Uganda, Senegal, Mauritius, South Sudan, Mozambique, Tanzania, Ivory Coast, Ghana, Rwanda, Zimbabwe, Zambia, Rwanda, Malawi Zanzibar and more.

To build conversation on post pandemic recovery linked to clean air agenda
Blue sky – India
Blue sky – Africa

Brookings edu The Conversation
Pre-COVID-19 during pandemic - aerosol optical thickness

- Aerosol suspension over countries with high population density huge
- Pollution reduced during March and April
- Started increasing after lockdown restrictions eased in May.
Towards new normal: What are the air quality and public health challenges in Africa?
Clean air battle in Africa and Asia
Population weighted annual average PM2.5 concentration

Emerging health risk
Population weighted PM2.5 annual average in the Africa region

Source: CSE based on SoGA 2020 report
New Threat: Ozone
Population weighted average seasonal 8-hour daily maximum ozone concentration

Source: SoGA 2020 Report, p 10
Double burden: Household air pollution exposure in sub-Saharan Africa

Source: SoGA 2020 Report
Dust invasion from Sahara June 2020

Source: Pawan Gupta NASA
Air pollution related deaths range from 36 deaths in Seychelles, 27,779 deaths in Kenya and 0.197 million deaths in Nigeria.


Source: SoGA 2020 Report
Last Pan Africa Dialogue of the Clean Air Solutions Network in 2020 on --- Restarting Public Transport in Africa: *Post Pandemic Agenda for Safe and Affordable Commute for Clean Air*
Impact of COVID 19 Pandemic on activity pattern

Nigeria: (Percentage Change)

Retail & Rec. trips: -58%
Grocery & Pharm. trips: -48%
Park trips: -53%
Transit trips: -58%
Workplace trips: -62%
Residential trips: +33%

Source: Google COVID-19 community mobility reports
Impact of COVID 19 Pandemic on activity pattern

Kenya: (Percentage Change)

Retail & Rec. trips: -50%
Grocery & Pharm. trips: -39%
Park trips: -38%
Transit trips: -47%
Workplace trips: -60%
Residential trips: +32%

Source: Google COVID-19 community mobility reports
Africa: Immediate steps for safe operations

Public transport: detailed guidelines adopted

Nigeria, Ethiopia, Rwanda, South Africa, Ghana….

- Hygiene and physical distancing
- Ban on non-essential interstate passenger travel
- Limiting occupancy
- Special buses designated for public servants
- Cashless payment
- Signage and posters informing and educating commuters about COVID-19
- Fuel made cheaper for public transport
Chance to build active transportation

• Implement plan to earmark and demarcate walking and cycling lanes – preference for contact free travel high

• Local area plans to create appropriate infrastructure.

• Infrastructure to support cycling and walking e.g. bicycle lanes, expansion or repair of sidewalks, etc.

• Public amenities and public parks within neighbourhoods to enhance the experience.

• Reinforce compact urban form to reduce distances
Africa doing it right

Need speed and scale of change in global south

Uganda adopted Non Motorised Transport Policy - open street events, Integrated walking and cycling corridor
Public transport reforms

Rea Vaya BRT in Johannesburg and BRT-Lite project in Lagos are success stories.

Integration of the taxi association and transport operators with formal BRTS.

Uganda, Senegal, Kenya, Ethiopia, Ghana, Tanzania, Botswana, Rwanda and Ivory Coast taking steps forward
Towards new normal: Emerging good practices to address vehicular pollution

Linking green recovery with emissions standards, fuel quality roadmap, electric mobility, and mobility transition
Fuel quality transition: Spread of low Sulphur diesel
(Diesel sulphur levels in 2020)

Source: https://www.unep.org/global-sulphur-levels
Strident steps

- **2015 onwards**: Burundi, Kenya, Rwanda, Tanzania and Uganda adopting and implementing 50 ppm diesel sulphur fuel.
- **2017**: Gradual progress in Ghana, Malawi, Mozambique and Zimbabwe
- **Nigeria**: notification for low sulphur diesel (50 ppm) and petrol (150 ppm). Implementation awaited.
- **2019**: Benin, Eswatini, Lesotho and Namibia
- **Ethiopia** is drafting the low sulphur fuel quality roadmap.
- **Mauritius**: 50 ppm sulphur fuels.
- **Botswana, South Africa, and Zambia**: diesel sulphur range of 50–500 ppm.
- **Lesotho, Malawi, Mozambique, Namibia, Eswatini, and Zimbabwe**: 50 ppm sulphur fuels.
- **Botswana and South Africa**: are aiming for 10 ppm sulphur fuels. Timeline is not clear.
- **Morocco**: Implemented 50 ppm sulphur diesel in 2012 and 15 ppm sulphur diesel in 2018.
- **West African countries**: to adopt low sulphur fuel as per the Economic Community of West African States (ECOWAS) meeting decision.
Progress in vehicle emissions standards slower

- Progress on emission standards slower.
- ECOWAS recommended that the West African countries adopt regional standard -- Euro IV.
Slow action on heavy duty vehicles

Source: https://www.unep.org/global-sulphur-levels
Fuel pricing and alternative fuel pricing strategy

- **Diesel consumption** largely driven by the high share of commercial, freight and public transport
  - In several countries, (Angola, Madagascar and others), the share of diesel in total fuel consumption varies by 70–80 per cent.
  - Botswana, Namibia, Lesotho etc. have narrower price gaps and the share of diesel consumption is 50–55 per cent.
  - Due to price differential in favour of diesel the share of diesel cars is increasing in the region.

- **Nigeria - best-practice:**
  - Price of petrol is kept effectively cheaper than that of diesel. This has controlled dieselisation of cars. The share of diesel consumption in total fuel consumption is only 16 per cent

- Move towards Compressed natural gas (CNG) programme in Nigeria, Egypt and Cote d’Ivoire
On-road emissions inspection and management

How will Africa keep the vehicles low emitting during their useful life on road?

- **Rwanda**: Law mandates that all vehicles need to undergo emissions inspection at vehicle inspection centre. Implemented East African Community (EAC) depreciation schedule through a free-on-board depreciation rate. Helped make older cars more expensive.

- **Kenya**: Every vehicle more than 4 years old from the recorded date of manufacture to be inspected at motor vehicle inspection unit. Environmental compliance ensures that on-road vehicles do not pollute and emit beyond the tolerable limit as specified for inspection of road vehicles.

- **Uganda**: Uganda has initiated vehicle inspection for on-road vehicles to check road-worthiness and emissions.

- **Nigeria**: All vehicles inspected based on the provision of the Road Traffic and National Vehicular emission control Regulation. Emission tests are conducted and vehicles whose emissions level surpasses the standards are rejected.

- **Ethiopia**: Efforts are being made to organise the vehicle inspection centre to address the problem of in-use emissions.
Electric vehicle programme

How zero emission transition is an opportunity in Africa?

- Nascent beginning in Africa
- Kenya EV programme
- The UNEP launched a pilot electric bikes project in Nairobi’s Karura Forest on March 2, 2021. Electric two-wheeler assembly has started in the region.
- Rwanda: Announced incentives for electric vehicles. Aims to reduce 38% emissions by 2030. Charging infrastructure, lower electricity tariff, tax incentive, investor incentives etc
- Nigeria manufacturing and assembly capacity can be leveraged for assembling of electric two-wheelers at a scale and at affordable rates.
## Challenge of used vehicles

<table>
<thead>
<tr>
<th>Indicator (Unit)</th>
<th>Ethiopia</th>
<th>Kenya</th>
<th>Nigeria</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fleet size</td>
<td>587,400</td>
<td>1,300,000</td>
<td>3,590,000</td>
<td>2015</td>
</tr>
<tr>
<td>Sales of new vehicles (p.a.)</td>
<td>18,000</td>
<td>19,523</td>
<td>26,400</td>
<td>2015</td>
</tr>
<tr>
<td>Commercial vehicles (% new sales)</td>
<td>16</td>
<td>86</td>
<td>29</td>
<td>2015</td>
</tr>
<tr>
<td>Passenger vehicles (% new sales)</td>
<td>84</td>
<td>14</td>
<td>71</td>
<td>2015</td>
</tr>
<tr>
<td>New vehicles (% total fleet)</td>
<td>15</td>
<td>20</td>
<td>10</td>
<td>2015</td>
</tr>
<tr>
<td>Second hand vehicles (% total fleet)</td>
<td>85</td>
<td>80</td>
<td>90</td>
<td>2015</td>
</tr>
<tr>
<td>Motorisation rate (/1000 people)</td>
<td>2</td>
<td>28</td>
<td>20</td>
<td>2014</td>
</tr>
</tbody>
</table>

Source: Deloitte Africa Automotive Insights Report, 2016
## Vehicle import regulations

<table>
<thead>
<tr>
<th>Banned</th>
<th>Restricted by age</th>
<th>Incremental tax or additional excise duty on age</th>
<th>No import restrictions</th>
<th>No punitive import tariffs</th>
<th>No data</th>
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<tbody>
<tr>
<td>Egypt</td>
<td>Algeria</td>
<td>&lt; 3 years</td>
<td>Kenya &gt; 3 years</td>
<td>Burkina Faso</td>
<td>Benin</td>
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<tr>
<td>Morocco</td>
<td>Angola</td>
<td>&lt; 3 years</td>
<td>Cape Verde &gt; 4 years</td>
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<td>Botswana</td>
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<tr>
<td>South Africa</td>
<td>Chad</td>
<td>&lt; 3 years</td>
<td>Sierra Leone &gt; 4 years</td>
<td>CAR</td>
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<td>Sudan</td>
<td>Mauritius</td>
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<td>Ghana &gt; 5 years</td>
<td>Côte d’Ivoire</td>
<td>Burundi</td>
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<tr>
<td></td>
<td>Seychelles</td>
<td>&lt; 4 years</td>
<td>Tunisia &gt; 5 years</td>
<td>DJibouti</td>
<td>Cameroon</td>
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<tr>
<td></td>
<td>Gabon</td>
<td>&lt; 4 years</td>
<td>Uganda &gt; 5 years</td>
<td>EQ. Guinea</td>
<td>CAR</td>
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<tr>
<td></td>
<td>Libya</td>
<td>&lt; 5 years</td>
<td>Zimbabwe &gt; 5 years</td>
<td>Ethiopia</td>
<td>Chad</td>
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<tr>
<td></td>
<td>Mozambique</td>
<td>&lt; 5 years</td>
<td>Tanzania &gt; 8 years</td>
<td>Gambia</td>
<td>Congo</td>
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<td>Niger</td>
<td>&lt; 5 years</td>
<td>Côte d’Ivoire &gt;10 years</td>
<td>Ghana</td>
<td>Comoros</td>
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<td>Tunisia</td>
<td>&lt; 5 years</td>
<td>Gambia &gt; 10 years</td>
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<td>DJibouti</td>
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<td>Cameroon</td>
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<td>Madagascar</td>
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<td>Rwanda &gt; 10 years</td>
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<td>Eq. Guinea</td>
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<td>Lesotho</td>
<td>&lt; 8 years</td>
<td></td>
<td>Somalia</td>
<td>Gabon</td>
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<tr>
<td></td>
<td>Kenya</td>
<td>&lt; 8 years</td>
<td></td>
<td>South Sudan</td>
<td>Guinea</td>
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<tr>
<td></td>
<td>Mauritania</td>
<td>&lt; 8 years</td>
<td></td>
<td>Sierra Leone</td>
<td>Libya</td>
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<tr>
<td></td>
<td>Namibia</td>
<td>&lt; 8 years</td>
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<td></td>
<td>Tanzania</td>
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<tr>
<td></td>
<td>Reunion</td>
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<td></td>
<td>Madagascar</td>
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<tr>
<td></td>
<td>Senegal</td>
<td>&lt; 8 years</td>
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<td></td>
<td>Togo</td>
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<td></td>
<td>Benin</td>
<td>&lt; 10 years</td>
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<td></td>
<td>Zambia</td>
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<tr>
<td></td>
<td>DRC</td>
<td>&lt; 10 years</td>
<td></td>
<td></td>
<td>Mauritania</td>
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<tr>
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<td>Eritrea</td>
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<td></td>
<td></td>
<td>Namibia</td>
</tr>
<tr>
<td></td>
<td>Swaziland</td>
<td>&lt; 15 years</td>
<td></td>
<td></td>
<td>Reunion</td>
</tr>
</tbody>
</table>

Vehicle import: Emerging good practices

- **Kenya**: Age restriction (8 years), incremental tax on vehicles, increase in price of imported vehicles. Exemption for battery operated and environmental friendly vehicles. Imported vehicles to be tested for road worthiness.

- **Ghana**: Introduced higher import taxes on vehicles with bigger engines. On April 30, 2020 -- a law banning importation of cars older than 10 years.

- **Ethiopia**: The Ethiopian Revenues and Customs Authority (ERCA) working on new version of tariff tax proposal has proposed limit for imported vehicles. Existing excise tax increases with increase in engine capacity. No excise tax and surtax imposed on public transport, trucks and cabs. Diesel cars pay more tax than transport goods.

- **Nigeria**: Tightening of tax measures for vehicle import: Adopted tougher policies on vehicle import. Cost of import increased.

- **Uganda**: Environment levy and higher taxes on older engines. Vehicle age restriction proposed at 8 years. Re-established mandatory vehicle inspection and pre-shipment inspection.
Vehicle import: Emerging good practices

Mauritius:

Age limit on all imported used vehicles (Used imported cars, SUVs and jeeps to be between 18 months and 4 years; Double cabs between 18 months and 3 years. Goods vehicles 6 years; vans – 4 years; buses – 3 years and motorcycles less than one year without any permission for resale. Minimum age limit of 18 months to protect the new car industry.)

CO2 levy/rebate system and subsequent introduction of excise duty restructure linked with engine size

Other fiscal measures promoting cleaner vehicles:

Setting systems for verification for imported vehicles

Obligation of vehicle dealers and accountability

Rwanda

No age restriction on imported vehicles. But to discourage old vehicles, car depreciation factor is applied on taxes to make older cars more expensive.

Zambia

Duties and taxes on used vehicles are specific and based on the age and type of vehicles.

Vehicle registration fee and carbon emissions surtax. Older vehicles attract higher duties and taxes.
Vehicle import: Emerging good practices

**Zimbabwe** -- Age restriction; charges levied on vehicle imports include customs duty, surtax and VAT. Vehicles with large engine capacity have to pay high customs duty.

To encourage both local and foreign direct investment in the local automotive assembly and components manufacturing to be 10% of total foreign direct investment by 2026 and exports to be 50% of total local production by 2026.

**Côte d’Ivoire**: Age restriction; Import of vehicles is governed by a law that imposes a contributory fee (US $300) on road safety, congestion and pollution from vehicles. This is imposed on ten-year-old passenger and freight vehicles. This is a pre-importation inspection for road worthiness.

**Tanzania**: No age restriction; Additional excise duty that increases with age of vehicles.

**Mozambique**: No age limit; but an extra tax is imposed from seven years onwards; Stratified tax system based on engine size. Bigger engines attract higher taxes.
Sri Lanka:

- **Age cap:** Second hand vehicles imported for personal use have age restriction of 4 years while those for business use 5 years
- Reducing to two years for personal vehicles, and five years for vans and dual purpose vehicles
- **Tax on diesel cars higher than petrol cars. Incentive for hybrids**

**Global good practice**

Next steps on vehicle import

Importing countries

Use tax measures to make older vehicles more expensive and encourage new vehicles

- Limit age of imported vehicles
- Link emissions standard with fuel quality and imports
- Ban used vehicles imports on the basis of health and emissions grounds
- I/M is small part of solution
- Need regional platform for harmonised Africa-wide action

Exporting countries

Identify global platform to influence export policies of the exporting countries to stop dumping. Eg WTP 29. Need global agreement

- Exporting countries need circular policy to stop export of old vehicles.
  - Europe and US have recycling of end of life policy; But does not stop export of old vehicles
  - Japan increases taxes on older vehicles to speed up turnover
  - Finally reduce numbers: There is a limit to dumping
The agenda for ‘New Normal’: Post-lockdown to keep the gains of blue skies and clear lungs
Global South
Network conversation for experience sharing to enrich action

- Harmonise action on fuel quality and emissions standards roadmap
- Strengthen national policies and action
- National and regional action on vehicle import
- Fiscal strategy to enable technology transformation
- Early action on electric mobility
- On-road emissions monitoring and management to keep vehicles low emitting
- Restart and augment public transport system and service
- Reform based fiscal package and fiscal instruments to support revival of transit systems and reduce cost burden on bus-based systems.
- Scale up active transportation
- Reduce travel needs --- work from home, staggered timing and roster-based attendance etc, to cut down unnecessary travel and reduce pressure on strained public transport.

This agenda cannot wait anymore. Change must start now
Thank you